

**REMARKS**

Entry of the foregoing, reexamination and further and favorable reconsideration of the subject application are respectfully requested. By the present amendment, the claims have been amended to recite that the arachidonic acid-containing oil has an arachidonic acid content of 30 to 50%. Support for this amendment to the claims may be found, at the very least, on page 10, lines 21-25, of the specification as filed. Furthermore, claim 19 has been amended to recite that the nitrogen source is derived from a defatted soybean or non-defatted soybean subjected to heat treatment. Support for this amendment to claim 19 may be found, at the very least, in example 3 on pages 13 and 14 of the specification as filed (wherein defatted and heat-treated soybean is used) and in example 4 on pages 14 and 15 of the specification as filed (wherein non-defatted and heat-treated soybean is used). Finally, claims 21 and 22 have been canceled, without prejudice or disclaimer to the subject matter disclosed therein. No new matter has been added by the present amendment.

Claims 19-28 have previously been rejected under 35 U.S.C. § 112, first paragraph, for purportedly containing subject matter not described in the specification as filed. Claim 19 has been amended to delete the phrase "wherein the ratio of the nitrogen source derived form soybean with respect to the total nitrogen source in the medium is at least 86%." This amendment was made to expedite prosecution of the application, and applicants reserve the right to pursue the canceled subject matter in a continuation application.

Claims 37-46 have previously been rejected under 35 U.S.C. § 112, first paragraph, for purportedly containing subject matter not described in the specification as

filed. According to the Examiner, the application as filed lacks direction, guidance or working examples for making mead containing oils. Applicants direct the Examiner to page 3, lines 22 to 29, of the specification as filed, wherein it is recited that Mead acid is unsaturated fatty acid which can be used in the invention of the present invention. One of skill in the art, at the time the application was filed, would have known how to make an oil containing Mead acid. Furthermore, one of skill in the art, given the disclosure of the present application, would have known how to make an Mead acid containing oil characterized by having a 24, 25-methylencholest-5-en-3 $\beta$ -ol compositional ratio of 35% or lower and/or in a proportion of 1.2 or less with respect to the desmosterol compositional ratio. See, for instance, page 3, line 21, to page 7, line 31, of the specification as filed.

As stated in the MPEP (section 2163.04) the Examiner has the initial burden or presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. The Examiner in the present case has not proved by a preponderance of the evidence why the specification does not support a claim directed to a Mead acid-containing oil. Although the examples provided in the specification as filed are directed towards producing an arachidonic acid containing oil, there is no requirement that every embodiment of an invention be supported by actual data. The Examiner has not indicated why it is believed that the methods disclosed in the specification as filed could not be used to produce a Mead acid-containing oil, and therefore has not met his burden.

Finally, with regard to the prior art rejections, in the present invention the use of heat-treated soybean provides a high content of unsaturated fatty acids and decreased the

24,25-methylenecholest-5-en-3 $\beta$ -ol compositional ratio. None of the cited references disclose or suggest that the use of heat-treated soybean provides higher unsaturated fatty acid content and a low level of 24,25-methylenecholest-5-en-3 $\beta$ -ol content. In this connection, although Shinmen et al discloses that "yeast extract, soybean meal and corn steep liquor were found to be suitable nitrogen sources for ARA production," this reference does not suggest the use of heat-treated soybean. In addition, although Shimizu et al refers to 24,25-methylenecholest-5-en-3 $\beta$ -ol, concrete data was obtained from a culture using a medium containing yeast extract, not heat-treated soybean. Therefore, Shimizu et al does not disclose or suggest the present invention, which provides an oil having a high content of highly unsaturated fatty acids and decreased amount of 24,25-methylenecholest-5-en-3 $\beta$ -ol.

In view of the above remarks, and the amendments to the claims, it is believed that the application is in condition for allowance and further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited.

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In the event that there are any questions relating to this application, it would be appreciated if the Examiner would telephone the undersigned attorney concerning such questions so that prosecution of this application may be expedited.

Respectfully submitted,

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**Attachment to Preliminary Amendment dated January 4, 2002**

**Marked-up Claims 13, 14, 19, 29 and 32**

13. (Twice Amended) An arachidonic acid-containing oil characterized by having a 24,25-methylencholest-5-en-3 $\beta$ -ol compositional ratio in a proportion of 1.2 or less with respect to the desmosterol compositional ratio, and an arachidonic acid content of [18 to 54%] 30 to 50%.

14. (Twice Amended) An arachidonic acid-containing oil characterized by having a 24,25-methylencholest-5-en-3 $\beta$ -ol compositional ratio of 35% or lower, a 24,25-methylencholest-5-en-3 $\beta$ -ol compositional ratio in a proportion of 1.2 or less with respect to the desmosterol compositional ratio, and an arachidonic acid content of [18 to 54%] 30 to 50%.

19. (Twice Amended) A process for production of an unsaturated fatty acid-containing oil, characterized by culturing with aeration a microorganism belonging to the genus *Mortierella* subgenus *Mortierella* in a liquid medium containing a nitrogen source derived from [soybean in a fermenter] defatted soybean or non-defatted soybean subjected to heat treatment, and the unsaturated fatty acid-containing oil is collected from the cultured product[, wherein the ratio of the nitrogen source derived from soybean with respect to the total nitrogen source in the medium is at least 86%].

**Attachment to Preliminary Amendment dated January 4, 2002**

**Marked-up Claims 13, 14, 19, 29 and 32**

29. (Amended) A nutritive dietary supplement comprising an arachidonic acid-containing oil characterized by having a 24,25-methylencholest-5-en-3 $\beta$ -ol compositional ratio of 35% or lower and an arachidonic acid content of [18 to 54%] 30 to 50%; an arachidonic acid-containing oil characterized by having a 24,25-methylencholest-5-en-3 $\beta$ -ol compositional ratio in a proportion of 1.2 or less with respect to the desmosterol compositional ratio and an arachidonic acid-containing oil characterized by having a 24,25-methylencholest-5-en-3 $\beta$ -ol compositional ratio in a proportion of 1.2 or less with respect to the desmosterol compositional ratio, and an arachidonic acid content of [18 to 54%] 30 to 50%.

32. (Amended) An arachidonic acid-containing oil characterized by having a 24,25-methylencholest-5-en-3 $\beta$ -ol compositional ratio of 35% or lower, and an arachidonic acid content of [18 to 54%] 30 to 50%.